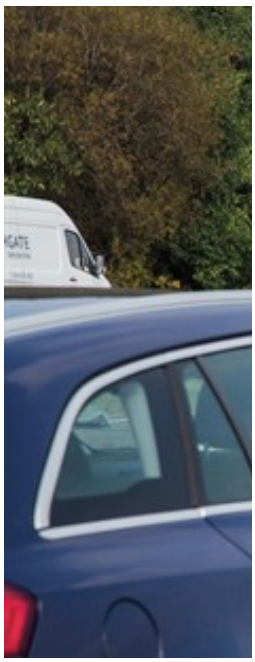
ITS International

Workzone safety can be economically v

First published in ITS International September October 2014 as Counting the savings of work

David Crawford looks how workzone safety can be 'economically viable'.



An intruding vehi
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Highway maintenance is one of the most dangerous construction industry occupations in Europe. Research from The Netherlands on fatal crashes indicates that the risk facing road workzone operatives is 'significantly higher' than that for the general construction workforce. A survey carried out by the **Highways Agency**, which runs the UK's motorway and trunk road network, has suggested that 20% of road workers have suffered injuries from passing vehicles during their careers and a frightening 54% have had a near miss.

The reliance of on soft barriers for guarding temporary workzone, such as traffic cones which need battery-powered lanterns for overnight functioning, has prompted a look at the potential for using this type of power source to drive smarter perimeter protection systems. The ensuing EC-sponsored, 2012-2014 **Safelane** project highlighted the huge material and person-hour waste factors inherent in using and replacing conventional disposable batteries, and produced an alternative – a smart battery.

As it has progressed, results have shown the scope for making substantial cost savi traffic management officers from passive zone perimeter guarding duties (which ca productive roles. Another is the prevention of high plant and construction vehicles f cabling.

The eight-partner, four-country project held its final test day last month. Events tha resistance to vehicle impact of a new smart rechargeable lamp battery; and the den traffic management system.

This has two key elements. The first is the intelligent, battery-powered 'intellicone' Highway Resource Solutions (HRS), the Safelane project leader. This system wireles portable variable message sign (VMS) produced by associated mobile visual informa

On detecting a perimeter breach by an errant vehicle, the system's sensor cone trig nearby members of the workforce and a warning 'STOP' message to the errant driv

It is also possible to link with a camera to record the incident and details of the intr

AustriaTec's Martin Böhm

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Traffic management officers also carry personal impact alarms, while site supervisors receive warnings by text message. Wirelessly linking a series of cone sensors creates a fully electronically-protected perimeter; while a recently-developed web platform enables two-way communications across the workzone for supporting site management, usin technology.

A facet of the Safelane system is also emerging alerting oncoming drivers to the presence of a w onto the carriageway.

MVIS general ma

In this case the system takes advantage of a nearby VMS that may normally display, for example, journey time information along the restricted road stretch, and use it to display a temporary alert, reverting to standard messages when the works vehicle has cleared. Developed in collaboration with international civil engineering contractor **Costain** and transport consultancy **TRL**, a project partner, the system is currently undergoing trials on a smart motorway installation scheme in the UK.

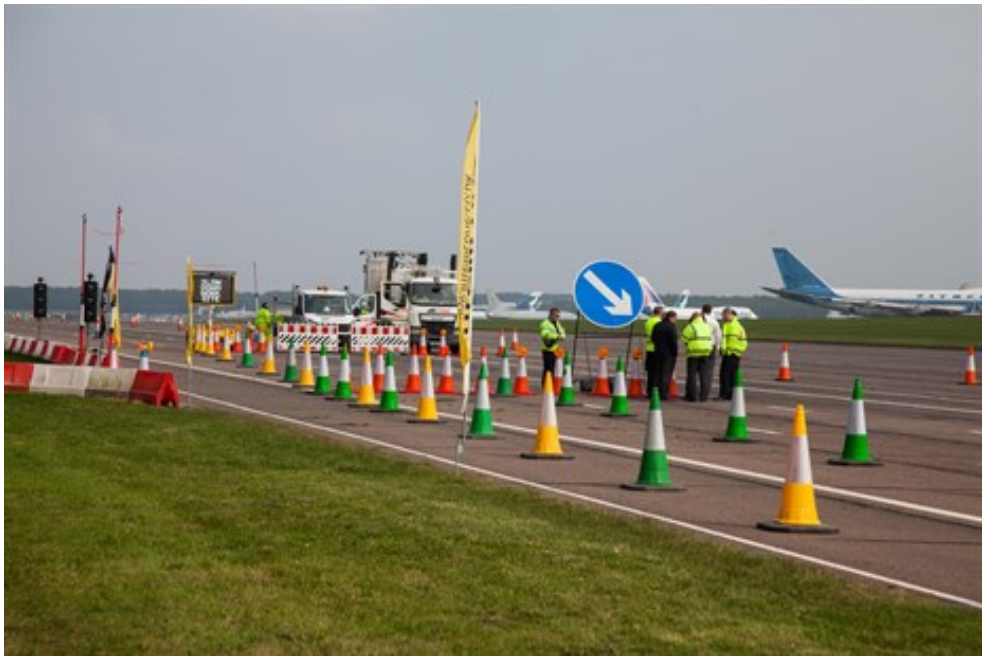
Further anticipated roles for the VMS include public information. For example, drivers being held in a queue can be told why they are being delayed and advised to switch off their engines, so helping to reduce pollution.

The over-height vehicle application offers an alternative to the conventional use of a pole-mounted beam set at the high of the obstructions that triggers an alarm if the beam is broken by an over-height object. This new approach uses temporary ground-mounted sensor cones to detect and warn all approaching site vehicles, via a plug-in in-cab device, that they are nearing an ove therefore drive with care.

Highway Resource Solutions director Roger Poeth told ITS International: "This mea position overheight sensors at pre-determined strategic locations, site managers ca alerts near to all potential hazards, which is much simpler." He estimates the cost s system.

Following the September 2014 impact trials TRL and two other partners, **Philips** El security technology specialist Eldes JSC; undertook the development of the smart b

This smart alternative can be contactlessly induction-charged at an on-site unit, inc work with any lantern lamp.



The Safelane demonstration site

Work is under
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CVs at Detroit: expectations and realities

Five special interest sessions orchestrated by the International Benefit, Evaluatio
World Congress examined the potential for connected vehicles (CVs) and attracte
Martin Böhm, **AustriaTech**'s head of unit, mobility systems & ITS deployment, a
previous discussions, we have now had the results of finalised field operational t
been tested on all kinds of vehicles and in varying real-world conditions."

"Again", says Böhm, who spoke in a session on CV evaluation, "technicians are n
can take the next big step by combining different vendors' equipment and prese
navigation devices, tablets or in-vehicle displays. Drivers will choose the interfac
demonstrations clearly show that they [drivers] are primarily interested in qualit
completeness and don't care too much about the specific device".

Those at Detroit agreed the technological achievements have exceeded early esti
communications (DSRC) roadside units is up to five times greater than original e

While Congress heard a lot about safety, Böhm said: "There seemed to be some
It is clear that there will be positive safety impacts, in terms of reduced accident
any ITS interventions.

"Even through CVs and automated driving could avoid 95% of crashes, system f
accidents."

Expectations of environmental impacts have seen estimates of up to 30% reducti
results have not been achieved in any of the demonstrations that we discussed,
percentages.

But if vehicles were connected Böhm said congestion could fall with improved tra
driving and shorter gaps between vehicles as well as the maximised use of curre

It emerged that the economic impact could be the driving force for adopting CV

“we need to agree on the organisational and institutional frameworks for creating the silos currently occupied by individual stakeholders.

“Only if we ensure that all the stakeholders involved have clear and commonly a way for full-scale CV deployment,” he concluded.

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